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Information Science and Technology Center Seminar

Clint Scovel
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"Radial Kernels in Learning Theory"

Wednesday, March 3, 2010
3:00 - 4:30 PM
TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: Gaussian kernels have been popular in Learning Theory for some time. It is only recently that they have been shown to allow efficient learning. However, they can suffer numerically since they may be evaluated by the computer as having only values 0 and 1. Consequently, other radial kernels, such as the exponential kernel and Student's kernel, are often used. The analysis of learning rates has yet to be developed for these kernels.

In this talk we will describe our progress in developing a comprehensive learning theory for radial kernels. We provide an introduction to Reproducing Kernel Hilbert Spaces (RKHS), their use in learning theory, and describe how to use Schoenberg's Theorem to describe the RKHS associated with a radial kernel in terms of the well understood RKHSs associated with the Gaussian kernels.

Biography: Clint Scovel received his Ph.D in Mathematics from the Courant Institute of Mathematical Sciences at New York University in 1983 and has been a technical staff member at Los Alamos National Laboratory from 1986 until the present. He has worked in Symplectic Integration Algorithms and Learning Theory and recently has been working to develop a theory of Validation and Certification.

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